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10/736,339	12/15/2003	Rajesh K. Saini	2001-IP-005484U1P1	3700
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ROBERT A. KENT P.O. BOX 1431 DUNCAN, OK 73536			EXAMINER LIGHTFOOT, ELENA TSOY	
			ART UNIT 1715	PAPER NUMBER
			NOTIFICATION DATE 02/25/2011	DELIVERY MODE ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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<b>Office Action Summary</b>	<b>Application No.</b> 10/736,339	<b>Applicant(s)</b> SAINI ET AL.	
	<b>Examiner</b> ELENA Tsoy LIGHTFOOT	<b>Art Unit</b> 1715	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 08 February 2011.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 42-61 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 42-61 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### **Response to Amendment**

Amendment filed on February 8, 2011 has been entered. Claims 42-61 are pending in the application.

Claims examined on the merits are 42-61.

### **Claim Rejections - 35 USC § 112**

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Rejection of claim 60 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention has been withdrawn due to amendment.

### **Claim Rejections - 35 USC § 103**

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 42-48, 55-59 and 61 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nguyen et al (US 6,209,643) in view of Lee et al (US 6,817,414) and Still et al (US 7,166,560) for the reasons of record set forth in paragraph 4 of the Office Action mailed on 11/4/2010.
5. Claims 42-48, 55-59 and 61 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nguyen et al '643 in view of Lee et al '414 and Still et al '560, as applied above, and

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further in view of Murphey et al (US 4,829,100) for the reasons of record set forth in paragraph 5 of the Office Action mailed on 11/4/2010.

6. Claims 42-48, 55-59 and 61 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nguyen et al '643 in view of Lee et al '414 and Still et al '560, as applied above, and further in view of McDougall et al (US 5,192,615) for the reasons of record set forth in paragraph 6 of the Office Action mailed on 11/4/2010.

7. Claims 42-61 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nguyen et al '643 in view of Lee et al '414 and Still et al '560 or over Nguyen et al '643 in view of Lee et al '414 and Still et al '560, further in view of Murphey et al '100 or over Nguyen et al '643 in view of Lee et al '414 and Still et al '560, further in view of McDougall et al '615, as applied above, and further in view of Mikos et al (WO 9425079A1) for the reasons of record set forth in paragraph 7 of the Office Action mailed on 11/4/2010.

8. Claims 42-61 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nguyen et al '643 in view of Lee et al '414 and Still et al '560 or over Nguyen et al '643 in view of Lee et al '414 and Still et al '560, further in view of Murphey et al '100 or over Nguyen et al '643 in view of Lee et al '414 and Still et al '560, further in view of McDougall et al '615 or over Nguyen et al '643 in view of Lee et al '414 and Still et al '560, further in view of Mikos et al '079, as applied above, and further in view of Cooke, Jr. (US 20030060374)\* and Schwartz et al (US 20030125215) for the reasons of record set forth in paragraph 8 of the Office Action mailed on 11/4/2010.

### **Response to Arguments**

Applicant's arguments filed February 8, 2011 have been fully considered but they are not persuasive.

(A) Applicants argue that none of Nguyen, Lee, or Still disclose the following element in claim 42: "combining an acid-releasing degradable material with a solvent or a plasticizer to create a coating solution" that can be coated onto particulates "on-the-fly." And, with respect to claim 55, none of Nguyen, Lee, or Still disclose the following element: "combining an acid-releasing degradable material with a plasticizer to create a coating solution, with the proviso that the plasticizer does not comprise a starch" that can be coated onto particulates "on-the-fly." In the present case, a solid degradable material is made coatable through the use of a claimed solvent or plasticizer. Applicants have discovered that they could create such a coatable material that would continue to act as an acid-producer down hole even though it had already been rendered coatable. Thus, it is impermissible hindsight to combine the acid-releasing materials described in Lee and Still with the liquefied tackifying solutions of Nguyen.

The Examiner respectfully disagrees with this argument. In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

(B) Applicants submit that the Office Action at page 15 indicates that "Nguyen teaches that the treatment chemical may be absorbed or coated on the proppant or even may be in solid particulate form ... the treatment chemical may be introduced into a treating fluid either in solid particulate form or in liquid form in a similar manner as a tackifying compound, i.e. in the form of a solution in a solvent." While Nguyen describes the fact that a solvent can be used with the tackifying agent in order to create a liquid solution of the tackifying agent, this disclosure is immaterial to the form (liquid or solid) of the treatment chemical. (Nguyen at col. 5, ll.55-58). Nguyen does not describe the use of a solvent or plasticizer to create an on-the-fly coatable treatment chemical, rather Nguyen teaches that a solvent can be used to affect the form of the tackifying agent itself.

The argument is unconvincing for at least the reason that Applicants do not explain why Nguyen's teaching at column 8, lines 12-15 that the treatment chemical may be introduced into a treating fluid either in solid particulate form or in liquid form in a similar manner as a tackifying compound, i.e. in the form of a solution in a solvent. Applicants also did not rebut the Examiner's statement that that incorporation of a carrier or diluent was held to have been

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obvious. In re Lerner 169 USPQ 51 (CCPA 1971); In re Rosicky 125 USPQ 341 (CCPA 1960). Note that introducing the treatment chemical in a particulate form in Nguyen et al is OPTIONAL since Nguyen teaches that the treatment chemical may be either absorbed or coated upon or in a substrate (See column 3, lines 43-44), the substrate being porous or non-porous (which may or may not function as a proppant or gravel pack material) or even particulates or agglomerates of particles of a desired solid treatment chemical (See column 4, lines 31-36), the treatment chemical may be introduced into a treating fluid either as a solid particulate or in a liquid form, e.g. in its dissolved form as a liquid solution of the solid treatment chemical in a solvent.

As to claimed on-the-fly coating, Nguyen et al teaches that in a mixture of a proppant, a liquid or solution of a tackifying compound, a solution of a treatment chemical and, optionally, a hardenable resin, the tackifying compound coats at least a portion of the proppant **upon** admixture therewith (See column 3, lines 40-46). Obviously, the treatment chemical mixed with the tackifying compound would also be coated on the proppant together with the tackifying compound **upon** admixture with the proppant, i.e. on-the -fly.

(C) Applicants submit that the Office Action at pages 4-5 relies on Lee as teaching the replacement of conventional gravel pack sand with "polymerized alpha-hydroxycarboxylic acid coated proppants such as polyglycolic-acid-coated sand." Applicants note that the pending claims are not directed to simply coated particulates. In Lee, the disclosure teaches polymerizing a monomer of glycolic acid in presence of proppant by heating to an elevated temperature. (Lee at col. 3, I. 64 - col. 4, I. 11). That is, Lee performs condensation polymerization with the removal of water in the presence of the particulate; this is not a method amenable to on-the-fly use at the well site. By contrast, the pending claims take an already prepared polymer and make it into a coatable substance by the addition of a solvent or plasticizer.

The Examiner respectfully disagrees with this argument. Lee is a secondary reference which is relied upon to show that polyglycolic-acid is **suitable** for the use as acid releasing treatment chemical, and may be used for coating a proppant (See column 2, lines 51-64). Therefore, it is irrelevant whether or not Lee teaches claimed methods of coating that are already taught by a primary reference of Nguyen. It is held that the selection of a known material based on its suitability for its intended use supported a prima facie obviousness determination in

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Sinclair & Carroll Co. v. Interchemical Corp., 325 U.S. 327, 65 USPQ 297 (1945). See MPEP 2144.07.

(D) Applicants submit that with respect to dependent claims 48, 54, and 61, the Examiner alleges that the limitation is optional. (Office Action at pp. 9 and 15). Applicants respectfully disagree. Specifically, the limitation is not optional because those claims require the acid-releasing degradable material to comprise a poly(orthoester). As the Office Action notes, claim 42 does not require the presence of poly(orthoester)." (Office Action at p. 15). Applicants agree that claim 42 does not require that element, but the dependent claim at issue does make that element required. That is, while the acid-releasing degradable material must comprise at least one of the materials listed in the Markush group of the claims from which they depend, the additional limitation introduced in claims 48, 54, and 61 requires that the acid-releasing degradable material comprise a specific material--namely a poly(orthoester)--even if other materials are present. Thus, Applicants again request that the limitation be given the proper patentable weight during prosecution.

The argument is unconvincing because poly(orthoester) is an **optional** member of Markush group in claim 42.

(E) Applicants submit that With respect to claim 55, the Examiner states that "plasticizer is commonly used as an additive in fracturing fluids." (Office Action at p. 10). Applicants respectfully request appropriate evidentiary support. Additionally, to the extent that the Examiner is relying upon "common knowledge" or "well known" principles to establish the rejection, Applicants request that a reference be provided in support of this position pursuant to MPEP § 2144.03. Furthermore, to the extent that the Examiner maintains any rejection based on an "Official Notice" or other information within the Examiner's personal knowledge, Applicants respectfully request that the Examiner cite a reference as documentary evidence in support of this position or provide an affidavit in accordance with MPEP § 2144.03 and 37 C.F.R. 1.104(d)(2).

The Examiner respectfully disagrees with this argument. First of all, Applicants misinterpreted the Examiner's position since the Examiner stated that a **solvent** suitable for dissolving a solid chemical treatment polymer of Lee et al and Still et al would make the chemical treatment polymer in a fracturing fluid more flowable, and thus, would read on claimed **plasticizer**, as described in the Applicants' specification (See page 6, lines 4-5). Second, the Examiner stated: "If it could be argued that the solvent reads on claimed plasticizer, it is the Examiner's position that plasticizer is commonly used as an additive in fracturing fluids\*", i.e. backed up her position by \* and provided Cooke, Jr. (US 20030060374)\* teaching that a degradable polymer such as polylactide (See column 7, lines 12-13) may be plasticized with a

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known plasticizing agent, such as a polyhydric alcohol, glycol or other relatively low molecular weight compound that mixes with the polymer to decrease its viscosity before it is placed in a wellbore. (See column 7, lines 21-25).

**B. Claims 42-48, 55-59, and 61 over Nguyen, Lee, Still, and Murphey**

Applicants submit that the combination of Nguyen, Lee, and Still fails to establish that every limitation of independent claims 42 and 55 was known in the prior art. Murphey fails to render obvious the deficiencies of Nguyen, Lee, and Still. Rather, the Examiner merely relied on Murphey for its alleged teaching that a particulate "can be coated rapidly and continuously by admixing in a stream (on-the-fly)... instead of batch mixing which requires a period of time..." See Office Action at 10.

The Examiner respectfully disagrees with this argument for the reasons discussed above.

**C. Claims 42-48, 55-59, and 61 over Nguyen, Lee, Still, and McDougall**

Applicants submit that the combination of Nguyen, Lee, and Still fails to establish that every limitation of independent claims 42 and 55 was known in the prior art. McDougall fails to render obvious the deficiencies of Nguyen, Lee, and Still. Rather, the Examiner merely relied on McDougall for its alleged teaching of adding a friction reducing agent such as polyacrylamide or alcohol to the fluid suspension of Nguyen. Office Action at 11. Applicants note that the Examiner appears to be indicating that simply combining any of the components of McDougall with a fluid used in a fracturing operation would meet the limitations of the claims. However, the claims are specific as to what components are combined and cannot therefore be taught by simple additives in a fluid, where they may or may not combine with any of the other components.

The Examiner respectfully disagrees with this argument. McDougall et al teaches that generally a fracturing fluid comprises a viscous or gelled polymeric solution, a propping agent, a chemical breaker and other additives commonly used in fracturing fluids (See column 2, line 65 to column 3, line 1), friction-reducing agents such as small amounts of high molecular weight linear polymers such as polyacrylamide or **alcohol** to reduce tension and resistance to return flow (See column 8, lines 7-16). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have added a friction-reducing agent such as polyacrylamide or alcohol to the fluid suspension of Nguyen et al with the expectation of providing the desired reduced tension, as taught by McDougall et al.

Since Applicants did not provide reasons why the combination is improper, the rejection stands.



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**D. Claims 42-61 over Nguyen, Lee, and further in view of Murphey, McDougall, or Mikos**

Applicants submit that the combination of Nguyen, Lee, and Still fails to establish that every limitation of independent claims 42 and 55 was known in the prior art. The argument with respect to independent claim 42 is equally applicable to independent claim 49. Mikos fails to render obvious the deficiencies of Nguyen, Lee, and Still. Rather, the Examiner merely relied on Mikos for its alleged teaching of certain degradable synthetic polymers and noted that "it is well known in the art that all these polymers hydrolyze with release of an acid." (Office Action at p. 12). Applicants note that Mikos is directed towards medical devices, but as to the issue of what is "well known in the art," the art of medical devices is not the art at issue. (Mikos Abstract). Thus, it is not surprising that Mikos does not disclose at least "combining an acid-releasing degradable material with a solvent or a plasticizer to create a coating solution" as required by independent claims 42 or 49, or "combining an acid-releasing degradable material with a plasticizer to create a coating solution" as required by independent claim 55. Mikos does not seek to make a degradable material coatable, but rather seeks to use a solid degradable material as "scaffolding" for tissue growth. (Mikos at col. 4, I. 66 -col. 5, I. 3). Claims 43-48, 50-54, and 56-61 depend, either directly or indirectly, from claims 42, 49, and 55 and therefore include all the limitations of those independent claims, respectively. Thus, claims 42-61 are patentable over the combination of Nguyen, Lee, Still, and Mikos. (35 U.S.C. §112, paragraph 4). Accordingly, for at least these reasons, Applicants respectfully request withdrawal of this rejection.

The Examiner respectfully disagrees with this argument. Mikos et al is a tertiary reference which is relied upon to show that a synthetic polymer which degrades in a controlled manner by hydrolysis (i.e. in water) include polyglycolic acid, polylactic acid, polyorthoester, polyanhydride, or copolymers thereof (See Abstract). Therefore, it is irrelevant whether or not the synthetic polymer of Mikos is usable in medical devices since polyglycolic acid, polylactic acid, polyorthoester, polyanhydride, or copolymers thereof will hydrolyze with water in any application as chemical properties of a compound depend on its structure not on intent of the use of the compound.

**E. Claims 42-61 over Nguyen, Lee, and Still or over Nguyen, Lee, Still, and Murphey or over Nguyen, Lee, Still, and McDougall or over Nguyen, Lee, Still, and Mikos all as applied above and in further view of Cooke\* and Schwartz**

Applicants submit that the combination of Nguyen, Lee, and Still and the combination of those references with any of Murphey, McDougall, or Mikos fails to establish that every limitation of independent claims 42, 49, and 55 was known in the prior art. In addition, Cooke and Schwartz do not remedy the deficiencies of the above combinations. Rather, the Office Action merely relied on Cooke for its disclosure of reducing the viscosity of a degradable polymer with a plasticizing agent. (Office Action at p. 13). As to Schwartz, the Office Action

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cites that reference for the proposition that poly-EO, poly-PG, and poly-EG can be used as friction reducers in fracturing fluids. (Office Action at p. 13).

The Examiner respectfully disagrees with this argument. **Cooke, Jr.** teaches that a degradable polymer such as polylactide (See column 7, lines 12-13) may be plasticized with a known plasticizing agent, such as a polyhydric alcohol, glycol or other relatively low molecular weight compound that mixes with the polymer to decrease its viscosity before it is placed in a wellbore. (See column 7, lines 21-25). **Schwartz et al** teaches that polyethylene oxide, polypropylene glycols or polyethylene glycols are suitable for the use in fracturing fluids as friction reducing compounds (i.e. claimed plasticizers enhancing flow of the treating fluid) (See P70). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have added polyethylene oxide, polypropylene glycols and polyethylene glycols to a fracturing fluid of the cited prior art with the expectation of providing the desired reduced viscosity and friction, as taught by Cooke, Jr. and Schwartz et al.

In other words, Cooke and Schwartz show that claimed limitations were known in the art, and thus, claimed limitations are obvious over cited prior art.

#### **IV Request for Evidentiary Support**

Once again, should any of the above asserted rejections be maintained, Applicants request appropriate evidentiary support. Additionally, if the Examiner is relying upon "common knowledge" or "well known" principles to establish the rejection, Applicants request that a reference be provided in support of this position.

As discussed above, Cooke, Jr. (US 20030060374)\* is supplied as evidentiary support for the Examiner's position. To the best of the Examiner's knowledge, all required support have been supplied by the Examiner. However, if not all evidentiary support are provided here, Applicants should submit specific "common knowledge" or "well known" principles used in the rejection that require additional support.

### **Conclusion**

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ELENA Tsoy LIGHTFOOT whose telephone number is (571)272-1429. The examiner can normally be reached on Monday-Friday, 9:00AM - 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on 571-272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Elena Tsoy Lightfoot, Ph.D.  
Primary Examiner  
Art Unit 1715

February 23, 2011

/Elena Tsoy Lightfoot/